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600N—Somalia Revisited

By Silvano Borsa, I2YSB

It was March 2005 when we received the bad news that Adan (6OØN) had died in a car crash. As you may recall, Adan was one of the promoters of the DXpedition to Somalia in 2005. We knew him in Galkayo, and he was very friendly.

We began to think how we could celebrate him and we decided to dedicate the next DXpedition to honor him. An operation in Somalia was not our major target. We had been working for months to activate a rare country but we received a denial just as our deadline approached. Unfortunately, it was too late to revert in another new and rare place. Therefore we decided to return to Somalia where we knew we would be very welcome. In last year's DXpedition we felt we did not adequately cover the low bands and we chose to concentrate our efforts there for this DXpedition. The solar activity is near the bottom, and we believed good antennas and a CW crew would assure us a good pileup in low bands.

The team was composed of 7 members: I1HJT Alfeo, I2YSB Silvano, IK1AOD Carlo, IK1HJS Carlo, IK2CIO Vinicio, IK2CKR Angelo and IK2DIA Marcello. Af-



The 600N Team

ter the logistical preparations and packing 350 Kg of materials, we left North Italy for Paris by van. The weather was bad and cold—we had snow in the Monte Bianco tunnel and rain for the rest of the trip. After a full day's drive, we arrived in Paris. Our flight was scheduled to depart at 22:00 via Daallo Airlines to Djibouti. It is a 9 hour flight. Thermal shock awaited us when we landed in Djibouti. The temperature was minus 5°C in Paris and plus 30°C in Djibouti—too hot after a cold winter in Europe!

From Djibouti to Galkayo, an old Antonov AN-24 is in service. Our departure was right on-time but unexpectedly we landed early. Our local contacts, Hussein and Hasan (6OØXJ) had not yet arrived to meet us and we had to face the custom officials ourselves. We were blessed—all our luggage arrived with us. We quickly moved by car to our guest house—the same place we rented a year earlier. Here we planned to install the SSB station.

The 4 element 6 band Yagi we

inside... INDEXA Ballot: 2006-2007

left in Galkayo last year was still there; we merely had to retrieve it from storage and install it on top of the house. We also installed an inverted-V for 40m and a dipole for 80m, and we were ready to go on the air for SSB operations.

The electrical energy supply in Galkayo had been a problem a year earlier. Power was off for many hours in the day and often the voltage was unstable and below 200V. Therefore, we rented a generator set to ensure our power needs were met.

The SSB operators, IK1AOD, IK1HJS, IK2DIA were to operate from this location, but we decided that a CW operator would take a turn at the controls here in the first night.

Our original plans called for installing three stations. Once the first site was operational, we went to inspect the second location at the Galkayo University. Immediately we realized that the yard was not big enough to allow us to install a beam at this location. Therefore we moved toward the Medical Centre, 5 km farther from the city. We found this to be a wonderful site for our operation with a big yard in which to lay the radials for the vertical antenna.

The Medical Centre is a hospital and we recalled it was inactive in the period of our previous expedition last year—there is a lot of space available inside and outside.

At sunrise we began to install a 5 element 7 band beam on top of the roof, a vertical for 30-40-80m, and an inverted-V for 40m. Late in the morning the setup was

ready except for the Battle Creek still to be erected. But, the weather was getting worse. A strong wind and black clouds signalled an advancing rainstorm. Some rain did fall, and it was an exceptional event—none of the local inhabitants recall rain ever falling in this season. Could it be the effect of our RF in the air? HI!

With a few complications we erected the Battle Creek—it is 15m tall and is dedicated to 80



**Five element, seven band antenna ready to go!
INDEXA was there!**

and 160m. To improve its efficiency we laid a number of radials—1000 meters of wire—to finish the job. Last, we installed two EWE used for low band receiving, one directed to the USA the other to Japan. This last antenna was strongly recommended by Vinicio, IK2CIO, based on his experiences during the IH9P operation. It really helped us on the low bands.

It was really hot and the sun very strong while we erected antennas. We dressed with a minimum of clothing, and the result was that we got sunburned! We were also wearing sandals on our feet. As we completed our work a longtime inhabitant told us that a number of big scorpions were living

under the stones. Just a few days later, at sunset, a big black mamba was seen close to our building!

The Medical Centre is not connected to the local electrical grid. Normally lighting services in the hospital are covered by solar panels. A 10 KW generator was acquired for our requirements. The generator location was rather far from our location and we experienced a significant voltage drop while operating. At the station end, supply voltage never exceeded 200V when under load. Consequently our ACOM-1000 output was lower than expected.

As soon we started to transmit, we found the pile-ups so huge that we needed to rotate operators for meal times so we could provide continuous operations even though the restaurant was in the city centre and it was necessary to go there by car. We had to stop one hour in the early morning to service the generators. Though off the air for at least for an hour, we found we did not affect our QSO rate very much.

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A Look Ahead to Solar Cycle 24

Carl Luetzel Schwab K9LA

*(This is an exclusive report offered by K9LA to INDEXA members. Carl regularly writes the propagation column for **World Radio**.)*

With Solar Cycle 23 nearing its minimum (which is expected to occur later this year or early next year), aficionados of the higher bands (15m, 12m, and 10m) are wondering what Cycle 24 will have in store for us in terms of propagation. Let's quickly review several early Cycle 24 predictions from the scientific community, and then let's take a look at propagation on the higher bands around Cycle 24 maximum based on these early predictions.

Table 1 gives pertinent information from three recent predictions. These predictions have seen quite a bit of press in the Amateur Radio community (especially the last one).

Author(s)	Publication	Year of Maximum	Maximum Smoothed Sunspot Number
Svalgaard, Cliver, Kamide	Geophysical Research Letters, Volume 32, January 2005	~2011	75 +/- 8
Schatten	Geophysical Research Letters, Volume 32, November 2005	~2012	80 +/- 30
Dikpati, Toma, Gilman	Geophysical Research Letters, Volume 33, March 2006	~2013	170 +/- 12 (30-50% higher than Cycle 23)

Table 1 — Early Cycle 24 Predictions

The first two predictions are quite similar, and predict that Cycle 24 will be smaller than Cycle 23 (which had a maximum smoothed sunspot number of 121). These two predictions make a lot of sense, as a plot of all recorded history (Cycles 1 through 23) suggests we are headed toward a multi-cycle period of smaller sunspot cycles as inferred from Figure 1.

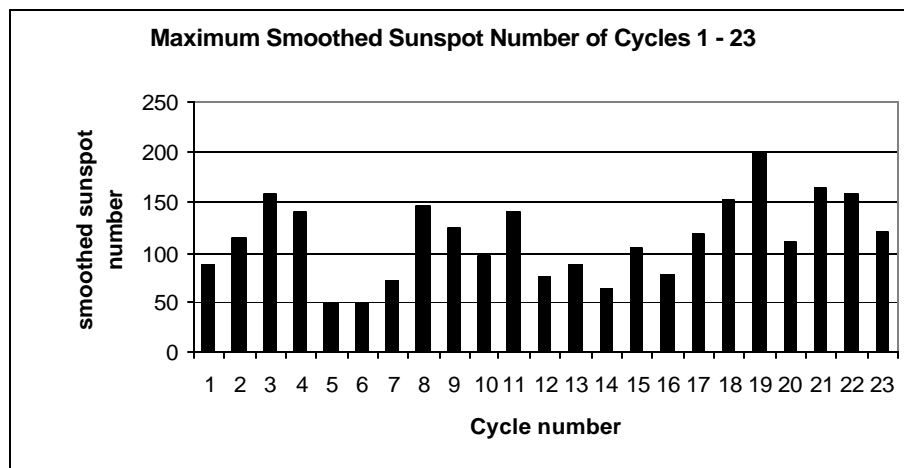


Figure 1 — All Recorded History

The last prediction is radically different, and the predicted smoothed sunspot number would be in line with Cycles 21 and 22 (which had maximums of around 160). It appears that the fundamental difference between the first two predictions and the last prediction is the assumption by the authors of the last prediction that the Sun has a much longer memory effect than just the previous cycle.

The difference in propagation between a smoothed sunspot of about 80 and 170 is quite dramatic on the higher bands. Figure 2 plots signal strength on 15m, 12m, and 10m in terms of S-units for a path between W9 and Europe in a winter month at the two different smoothed sunspot numbers. It is based on 500W and +12dBi antenna gains on both ends.

(Concluded on Page 4)

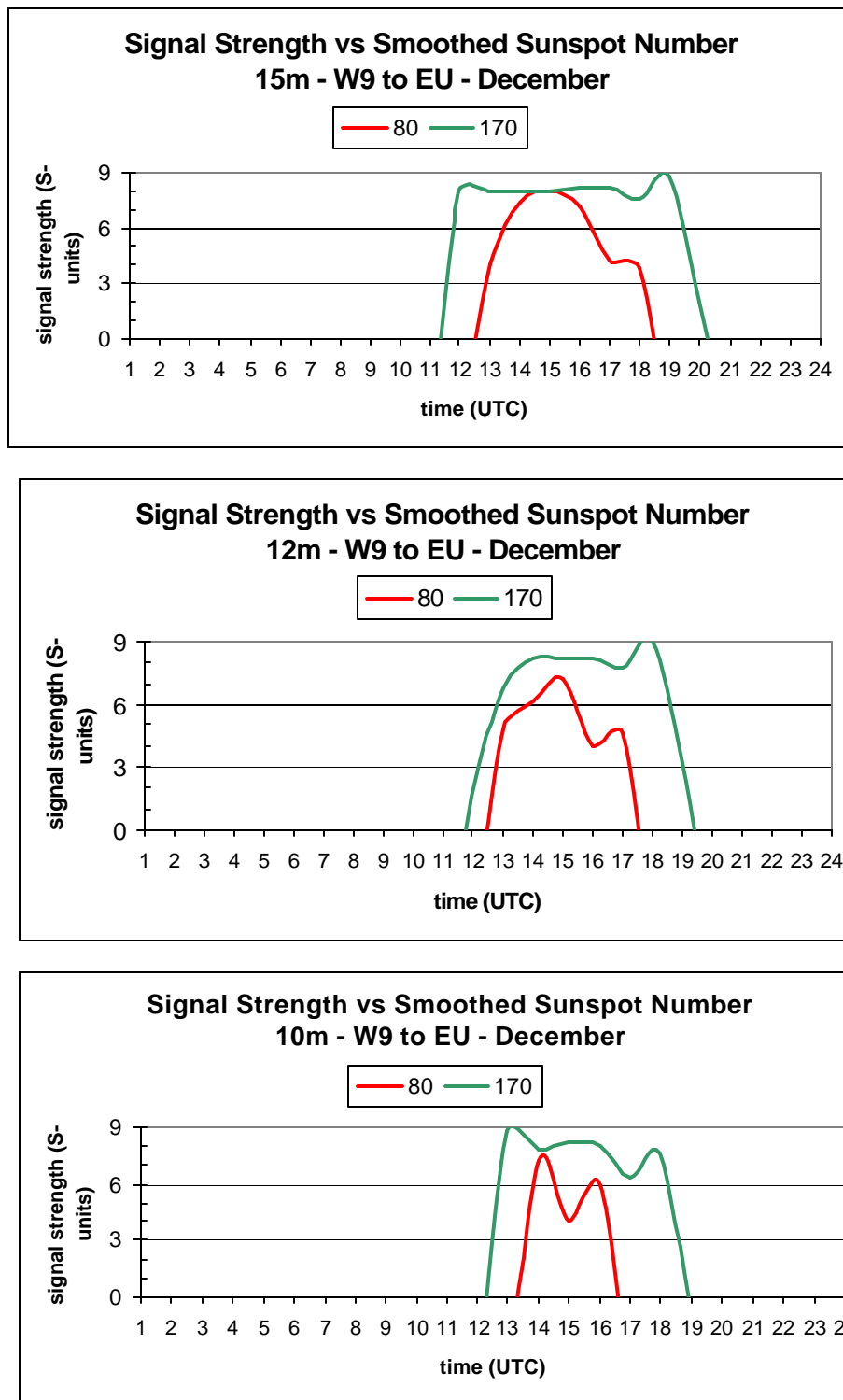


Figure 2 — Signal Strength Comparisons

Not only are the openings longer at the higher smoothed sunspot number, but the signal strengths are higher, too. Although the data in Figure 2 is for W9 to Europe, the same general trends hold for other paths on the higher bands.

Summary – On average a solar cycle lasts about 11 years, with its rise to maximum in about 4 years and its decline in about 7 years. Based on these averages, the higher bands should start coming back to life in 2009 or so. How good they'll be depends on the maximum smoothed sunspot number of Cycle 24. We'll just have to wait and see what happens here – then we'll find out whose prediction was most accurate.

(Continued from page 2)

We constantly kept tabs on the grey line, and we were ready to call the North American west coast long path, to give them a new one and a new zone. USA West Coast area is almost at the antipodes from Somalia and the contacts on low bands are possible for less than one hour during our sunset which corresponds to the sunrise there. We started calling on 40m, then moved to 80m CW, and sometimes 75m SSB. It was not possible to work in this way every day, sometime the noise and static was too high even for the EWE antennas. It was also quite difficult to operate on 40m.

The low solar activity negatively affected the propagation on the high bands. Little activity was found on 10 and 12 meters, and propagation on 6 meters didn't exist. Nevertheless in the second week of operation we added an additional station in the Medical Centre to fill up some available operator time. Using an IC 706, a dipole tuned for 15 m, and looking carefully for band openings, we put almost 1000 CW QSOs in the log operating barefoot!

We found a good spot to access the Internet in Galkayo. It allowed us to download email—especially email sent daily by our pilot station, Gianni (IS0VSG), who was most helpful giving us feedback from Europe. It was also possible to upload the log online every two days.

Casale Monferrato ARI section informed us via email that the International Space Station (ISS) was looking for a sked. They sent the frequency and the time schedule for the most suitable

orbits for Somalia. Commander Bill McArthur (NA1SS), was looking to earn DXCC from space and Somalia was, of course, a new one for him. Only three orbits were suitable for our location. We were ready, and the QSO was logged on the first attempt.

We were pleased to have an unexpected visit from the Mayor of Galkayo. He invited us to a dinner at the most prestigious hotel in the town to demonstrate to us the friendliness of the Galkayo community. During the dinner Isak (6OØMY), director of SARFEN, gave lifetime Somali Radio Ham Licenses to the newcomers, Alfeo (6OØHT), Vinicio (6OØIO), Angelo (6OØKR), Carlo (6OØJS), Carlo (6OØOD) and Silvano (6OØN).



Silvano flies the INDEXA Banner

Medical Operations at the Medical Center where we stayed have been temporarily (we hope) suspended while Doctor Abdul is in Italy to seek funding for operations and to return to Somalia to support the local hospital. In the meantime, there was no one to responsibly operate the hospital. Because of the forced hospital inactivity a number of children are not being cured. We met Doctor Jama, the Medical Centre Direc-

tor. He recorded a video on which he thanks all the radio amateurs which sent help to the hospital. It can be viewed at:

<http://www.i2ysb.com/comsed/index.htm>

Our DXpedition finally drew to a close. While awaiting our departure at the airport, suddenly, many soldiers and cars arrived—not because of us but because the Somali Presidential aircraft was arriving. Hasan (6OØXJ) told us that the President knew about our visit. When he arrived, he invited three of us to come to meet him. When we approached him, he shook our hands and asked us in good Italian if all had been OK during our visit!

We received many positive comments while operating, as well as on our QSLs, and in the mail. The log contains approximately 35,000 QSOs—most of them from Europe but also many from North American and from Japan.

We want to thank all friends and sponsors: INDEXA, NCDXF, EUDXF, GMDX, GDXF, CDXC, DANISH GROUP, SWODXA, MDXC, MARCONI CLUB, WESTERN NEW YORK ASS., DX 425 NEWS, A.R.I., A.R.I.

CASALE M., A.R.I. BERGAMO, A.R.I. SANREMO, A.R.I. BRONI/STRADELLA, A.R.I. SCANDICCI. Thanks to our sponsor's generosity it was possible to leave to Radio Galkayo some spare electronic tubes for their AM transmitter, antennas, an HF radio and a ACOM-1000 amplifier which it will help them to enlarge the covered area of their broadcasting.

—73 Silvano Borsa, I2YSB

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